ENERGY SERVICES Bulletin
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WESTERN AREA POWER ADMINISTRATION

Customer service, community support hand in hand for NMPP Energy

NMPP Energy, based in Lincoln, Nebraska, is a member-driven coalition of four organizations serving nearly 200 member communities in six Midwest and Rocky Mountain states. (Photo by NMPP Energy)

The small towns of Nebraska boast a surprising number of large commercial and industrial customers, drawn in no small part by some of the lowest electricity rates in the country. Ensuring the economic vitality of these businesses—and their communities—is a duty that NMPP Energy and its member organizations take very seriously. "If the businesses are healthy, then the utilities are healthy and we all win," said Bob Meade, former member services representative for Nebraska Municipal Power Pool and Municipal Energy Agency of Nebraska.

Meade, who retired in March, has a long history of working with municipal utilities in Colorado, Iowa, Nebraska and Wyoming to help large C&I customers keep their operating costs down. Low rates notwithstanding, Meade's first contact with a

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business usually comes when one complains to the local municipal utility about high bills. "Either that, or they have an infrastructure request," he said. "They want to upgrade their heating and cooling systems or outdated lighting."

Meade frequently used the opportunity to do an energy audit on the facility. Businesses need the audit to apply for the Rural Energy for America Program from the Department of Agriculture to fund energy efficiency upgrades.

REAP grants provide up to 25 percent of total eligible project costs for improvements such as HVAC, lighting, refrigeration units and insulation. "Those are the most popular improvements for grocery and convenience stores in particular," observed Meade. "Those upgrades can reduce a store's energy charges by as much as 60 or 70 percent. The savings pay for the improvements, and in six or seven years the business sees that money go back into the bottom line."

Bigger they are, more they save

Large—as in multi-national—companies have even more to gain from efficiency upgrades. Becton Dickinson Inc., in Meade's hometown of Holdrege, Nebraska, manufactures medical supplies such as insulin syringes to send all over the world. "Because they use robotics, the voltage and current levels have to be almost perfect," said Meade. "Otherwise, they lose product."

All products must be sterilized in an underground chamber, too, so a reliable, stable power supply is critical to operations. These circumstances make Becton Dickinson a good candidate for battery storage. NPPD is working with the company to evaluate the benefits and savings of installing a storage system.

Another, better known, large C&I customer is Frito-Lay in the town of Cozad. The snack food maker has a significant presence throughout the state due to excellent rail service and, of course, proximity to crops used as ingredients.

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Meade recalled performing a detailed infrared inspection of an electrical room at the plant a few years ago, using one of WAPA's IR cameras. "We identified more than 85 potential outages that could have caused downtime," he noted. "That proactive inspection saved them a huge amount of lost work and product. It also convinced them to get their own camera and perform regular inspections."

Saving electricity saves jobs

Sometimes, good C&I customer service can help to retain jobs when a business changes hands. When Bass Pro Shop took over Cabela's sporting goods stores in Nebraska, the city of Sidney expected to lose hundreds of jobs. However, Bass Pro Shop learned that Cabela's had a much more sophisticated data collection program, so the company decided to relocate its data operations to the Cabela's campus.

That plan hit a snag when Bass Pro Shop found low voltage in the selected building, and an engineering report failed to determine the cause. At the request of the Sidney public services director, Meade installed a power analyzer—again from WAPA—on the city's transformer. The data the analyzer collects will help to correct the problem, and Bass Pro Shop may be able to offset some of Cabela's layoffs with jobs in the data center.

Tools to build cooperation

Diagnostic tools, borrowed from WAPA, were critical in helping NMPP utilities to resolve electricity issues for both Frito-Lays and Bass Pro Shop. "IR cameras and power analyzers are great for dealing with key accounts," Meade pointed out. "You are able to walk in and do something proactive for your customers instead of waiting to react to their problems."

What is even better, he added, is when a member utility or customer decides to buy the tool themselves. Prices for diagnostic technologies keep coming down, and once a customer sees how much they can save doing preventative maintenance, the case is made.

But first, you have to show them, said Meade. "We have a slogan at NMPP Energy, 'Working together works,' and it's true," he declared. "It works when we get our member utilities to work with their customers and it works when NMPP works with WAPA."

Richard Eymann is stepping into Bob Meade's shoes at the end of March to continue NMPP Energy's tradition of outstanding member services. With 40 years of electrical and maintenance experience, Eymann will be providing the same high level of support and training NMPP Energy communities have come to expect. Members can contact Eymann at 402-474-4759. ■

Kayenta Solar Farm to expand; partners consider more renewables projects

Salt River Project purchased two years' worth of clean energy and environmental attributes from the 27.3- megawatt Kayenta I Solar Project, helping to fund its construction. When the Kayenta II expansion is complete, SRP will extend the original contract by one year. (Photo by Navajo Tribal Utility Authority)

Nothing says success like expansion, and the landmark agreement between the Navajo Tribal Utility Authority (NTUA) and Salt River Project (SRP) to expand the Kayenta Solar I facility has success written all over it.

Only the beginning

The announcement of the expansion coincided with signing a long-term solar contract for the sale of firmed energy and environmental attributes from Kayenta II, as the project is called. SRP and NTUA also signed a memorandum of understanding (MOU) in which they committed to pursuing future renewable energy projects.

"The Kayenta I Solar Project has become the Navajo Nation's showcase renewable energy project to demonstrate that the Navajo Nation is ready for large-scale renewable energy development and operation," said NTUA General Manager Walter Haase.

SRP General Manager and CEO Mark Bonsall said that the agreement is an essential platform for the utility and the tribe to develop future projects. "The renewable energy credits from this project will also help SRP expand its renewable portfolio to further reduce carbon emissions," noted Bonsall.

More renewables to come

Under the MOU, SRP will provide technical support in developing interconnection facilities for large-scale renewable development within the Navajo Nation. The utility will also provide procurement and financing expertise related to the development and ownership of such projects. The agreement targets the development of at least 500 megawatts (MW) of renewable energy projects over the next five to 10 years within the Navajo Nation.

During the development of Kayenta I, SRP signed a two-year energy and environmental attribute contract. Once Kayenta II reaches commercial operation, the utility will add another year to the Kayenta I contract with

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Navajo workers received more than 4,700 hours of specialized training in solar-utility construction for the Kayenta I Solar Project. Construction of the next phase will likely employ even more Navajo workers. (Photo by Navajo Tribal Utility)

options for further extensions resulting from the commitment to jointly pursue additional projects.

So far, development has focused on solar and wind resources, but the tribe is open to exploring other types of renewable generation. "We believe it is our responsibility to take the lead role in the development of renewable energy projects to promote economic development within the Navajo Nation," said NTUA Spokeswoman Deenise Becenti.

Developing workforce, economy

NTUA anticipates that Kayenta II will further prove the tribe's ability to develop renewable energy projects and build on the economic gains of the first solar facility.

The 27.3-MW Kayenta Solar Project generates electricity to power an estimated 18,000 homes served by NTUA. At the height of construction, around 278 people worked on the project, 236 of whom were of Navajo descent.

The Navajo workforce was paid $5.2 million and received over 4,700 hours of specialized training in solar-utility construction for Kayenta I. The construction of Kayenta II will likely employ even more Navajo workers and is expected to produce similar salaries for the employees.

Tribe members have taken the skills they learned on the first Kayenta facility to other projects, added Becenti. "That trained workforce was able to find construction jobs at a solar farm in nearby Gallup, New Mexico," she said.

The construction also generated $3,017,055 in taxes paid to the Navajo Nation. Overall, it is estimated that $15.6 million in economic activity occurred within the surrounding communities during construction.

Creating bright energy future

The Navajo Nation considers Kayenta II to be the next step toward the tribe producing energy for its own use. The facility is expected to begin commercial operation in the May 2019.

There are no current plans to add storage to the project, but the technology is on the tribe's radar for future opportunities. This is another area where the Navajo Nation may be able to leverage its partner's expertise. Last year, SRP signed two power purchase agreements with NextEra Energy Resources, one for a 20-MW solar array with energy storage and a separate agreement for a 10-MW grid-scale battery. The utility also plans to work with NextEra to test the economic viability of using storage to integrate intermittent renewable resources on its grid.

The Navajo Nation appreciates SRP's willingness to continue to work alongside NTUA, Haase stated. He looks forward to Kayenta II generating not only clean electricity, but more jobs and promising economic activity in the region, as well. "This partnership is all about progress," said Haase. ■

Study shows net-zero future at cost parity with coal

Platte River Power Authority recently got the results of a study it commissioned on the relative costs of transitioning to net-zero carbon generation by 2030. The study found that the northern Colorado generation and transmission utility can deliver a net-zero carbon generation portfolio for a cost premium of only 8 percent over the lifetime of the planning horizon (2018–2050).

A story in RMI Outlet, the Rocky Mountain Institute blog, noted that researchers used relatively conservative assumptions for solar and wind costs, and did not consider demand-side efforts in their calculations. This is significant not only because the estimated difference in cost is so small, but also because it indicates the actual cost premium may be even lower than 8 percent.

Federal hydropower – 90 MW
Photo by Platte River Power Authority

Rawhide Flats Solar – 30 MW
Photo by Platte River Power Authority

Silver Sage Windpower Project – 12 MW
Photo by Platte River Power Authority

History of commitment

PRPA and its municipal utility owners—Estes Park, Fort Collins, Longmont and Loveland—have a long-standing commitment to clean energy and efficiency. The G&T contracts for approximately 198 megawatts of carbon-free resources from wind, hydropower and solar assets. In fall 2016, PRPA diversified its power production portfolio further by adding 30 MW of solar power at Rawhide Flats Solar.

A small mountain town with many second-home owners, Estes Park installed two electric vehicle chargers in 2014 and offers its residents energy-efficiency programs and a renewable energy purchase program. Fort Collins, second-place winner of the Georgetown University Energy Prize, has been a global climate leader for nearly 20 years. It was at Fort Collins' request that PRPA undertook the net-zero study. Longmont City Council recently adopted a goal to use 100 percent carbon-free electricity by 2030 and Loveland, an active contributor to the Rocky Mountain Utility Exchange, provides its customers with an extensive menu of energy-saving programs.

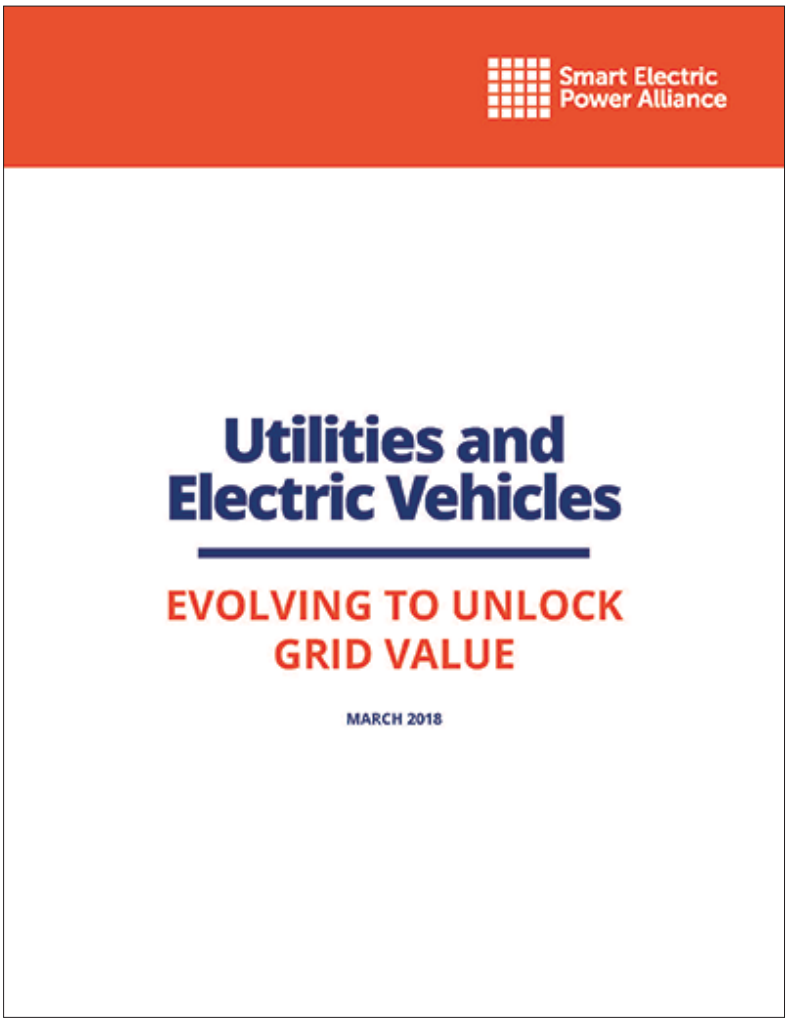
Calculating total cost

Technology company Siemens performed the study that is unique in showing a low cost for net-zero generation that incorporates transmission costs and balancing charges as well as fuel costs. RMI calls it proof that a net-zero path can achieve cost parity against coal even in coal country and that renewables can compete anywhere.

WAPA celebrates PRPA and its members for their initiative and for showing that public power utilities can lead the way to a low-carbon future. ■

SEPA issues 'state of market' report for electric vehicles

The market for electric vehicles is growing quickly, and utilities can expect to play a central role in minimizing the potential grid impacts of this new load and increasing access to charging infrastructure. With that in mind, the Smart Electric Power Alliance has surveyed more than 480 utilities about their EV programs to create the industry's first ever state-of-the-market report for EV programs.



Utilities and Electric Vehicles: Evolving to Unlock Grid Value couldn't come at a better time, with many industry EV adoption forecasts being revised due to exponential growth. Bloomberg New Energy Finance predicts that electricity consumption will grow from a few terawatt-hours a year in 2017 to around 118 TWh by 2030. Many utilities may be unprepared for this sudden change in load growth. SEPA has collected information and tools in this report that can help utilities and their partners find a path forward.

The report includes:

- A first-of-its-kind analytical framework for establishing the maturity of utility EV programs
- Fourteen types of utility EV programs and activities categorized into early, intermediate and late stages
- An overview of regulatory decisions regarding utility investments in EV charging infrastructure
- Recommendations for strategic utility planning on EVs
- Regulatory analysis and regional trends from over 70 EV-related regulatory dockets

A detailed analysis of the collected data revealed that 75 percent of utilities were in the earliest stages of EV program development. Time is not on the utilities' side and they must begin now to work with peers and others in the industry to develop a robust EV strategy and identify ways to leverage EVs as a grid asset. Preparation today will equip power providers with the knowledge and technologies they need to unlock value in this new load.

You can download *Utilities and Electric Vehicles: Evolving to Unlock Grid Value* for free. SEPA members can gain access to the dataset by logging in to the SEPA EStore. The dataset includes the list of utilities included in the analysis, the total number of programs and activities identified by stage for each utility and the identified utility stage.

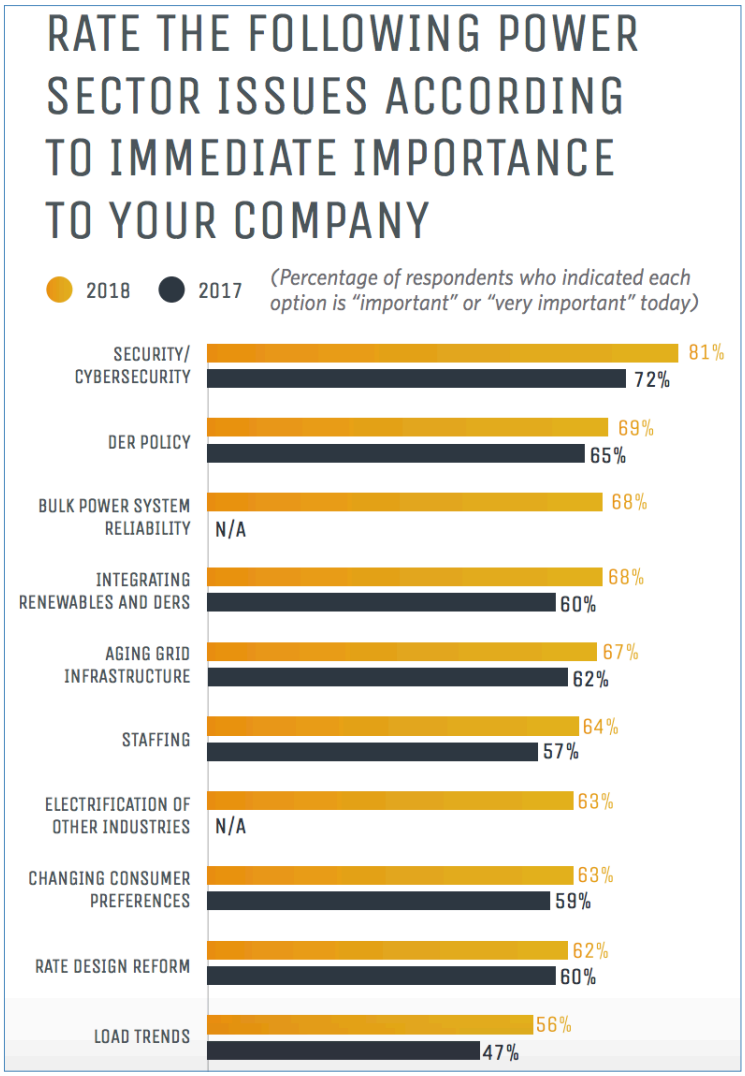
Electric vehicles potentially offer many benefits—as a distributed energy resource with the ability to modulate charge or even dispatch energy back into the grid—along with many unknowns for utilities. Use this report to introduce yourself to the promise and pitfalls of a load that could change our industry. ■

Utility Dive releases annual survey report

Unpredictability has become the new normal for the power industry as Utility Dive's fifth annual State of the Electric Utility Survey makes clear.

The survey of nearly 700 electric utilities in the U.S. and Canada indicated that their commitment to lower-carbon energy resources remains strong even as concern over market and policy uncertainty grows. Other top takeaways include:

- Expectations of load growth – Since 2008, utilities have faced stagnant or declining demand for electricity, but this year, utility professionals see that trend changing.
- Uncertainty, particularly in regard to federal regulation – Nearly 40 percent of utility professionals named uncertainty as their top concern about changing their power mix — almost twice the level of concern expressed about integrating distributed energy resources (DER) with utility systems.
- Cybersecurity fears – For the second year running, participants placed cybersecurity at the top of their list of concerns, with about 81 percent rating it either important or very important.
- Justifying emerging grid investments – Utilities see the need to invest in grid intelligence to manage electric vehicle (EV) charging infrastructure, DER, storage, analytics and cybersecurity. However, demonstrating the return on such high-tech investments to regulators, ratepayers and even their own organizations is complicated.
- Traditional cost-of-service regulation falling from favor – Utilities are ready to adapt their business models to take advantage of new technologies and market opportunities. Around 80 percent indicated they either have or want a regulatory proceeding in their state focused on reforming utility business and revenue models.



Artwork by Utility Dive

Perhaps the most positive message to be taken from the results of the 2018 survey is how many utilities are willing to rethink the traditional business model in the face of changes in the industry. The report has a laundry list of other important insights on rate design, DER ownership, the increasing popularity of EVs and more. Whether you participated in the survey this year or not, it is sure to make for interesting reading.

You can download the 86-page survey report for free, or read a rundown of the top results with graphs. Utility Dive also hosted a sneak-peak webinar on the results at the end of January, which you can listen to for free. ■

New report explores ways to help low-income customers

Management consulting firm DEFG recently released their EcoPinion Consumer Survey Report No. 31, *The Long Struggle Continues: Improving Service to Low-Income Customers in the Utility Sector.*

(Artwork by DEFG)

The report draws on data from more than 1,000 Americans to yield 534 respondents with household incomes below $50,000. Members of the Low Income Energy Issues Forum, a diverse working group seeking innovations to make utility service more affordable, collaborated on the survey.

Even as the economy continues to grow stronger, many Americans still struggle to pay their utility bills. The number of low-income respondents who reported trouble paying their utility bills in 2017 increased 7 percent over the previous year. Also, 20 percent of respondents had applied for energy assistance.

Contributing to the general anxiety of trying to provide for their families, low-income customers experience uncertainty about the utility bill itself, the complexity of applying for energy assistance and confusion about how to control costs. Utilities seeking to improve service to this demographic might offer a range of voluntary options that customers could choose according to their lifestyle.

Consumers who are intensely focused on their daily budgets need more convenient choices. Simplifying tariffs, facilitating energy assistance through social service agencies and offering individualized "energy counseling" are among the services that could provide greater control to customers with limited financial means.

The findings also indicated that the low-income segment is far more engaged with their energy consumption than utilities believed. A majority of survey respondents have taken action on their own to save money on electric or heating bills. Consumers are eager for more information to save even more.

Perhaps the challenge is not consumer engagement but the entire construct of utility programs and policies to assist these customers. For example, a key metric used by advocates is "energy burden," referring to the percentage of a household's income required to pay utility bills. Yet, when asked, low-income customers understood "burden" somewhat differently; they focus more on eliminating uncertainty and getting help when they need it (situational awareness). This is an important distinction.

The 2017 survey points to the long struggle to improve service to low-income customers, beginning with utility program developers being willing to listen more carefully to customers themselves. We must be prepared to let go of the assumptions that undergird programs and assistance measures intended to help these customers, and develop offerings that more closely match their needs.

You can download EcoPinion Consumer Survey Report No. 31 and other reports and articles from EcoPinion Publications. Registration and login is required. You can also sign up to receive email updates. ■

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